



DATE: May 7, 2008

TO: Interested Parties / Applicant

RE: Pet Angel World Services LLC / E097-26428-00639

FROM: Timothy J. Method
Environmental Coordinator

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 501, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Indianapolis Office of Environmental Services, Air Permits at (317) 327-2234.

Enclosures



Air Quality Hotline: 317-327-4AIR | knozone.com

Department of Public Works
Office of Environmental Services

2700 Belmont Avenue
Indianapolis, IN 46221

317-327-2234
Fax 327-2274
TDD 327-5186
indygov.org/dpw



May 7, 2008

Carl Spoeth
Pet Angel World Services LLC
6225 72nd Avenue N
Pinellas Park, FL 33781

Certified Mail: 7007 0710 0005 3965 6220

Re: Exempt Construction and Operation Status,
E097-26428-00639

Dear Mr. Spoeth:

The application from Pet Angel World Services LLC, received on April 17, 2008, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary crematory for pet remains, located at 4202 S. Meridian Street, Indianapolis, Indiana 46217, is classified as exempt from air pollution permit requirements. The source consists of the following emission units:

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, approved for construction in May, 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- (b) One (1) Fire Lake Shenandoah C-12-400 animal crematory, with multiple chambers, identified as PC-3, approved for construction in May, 2008, with a maximum operating capacity of 60 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 0.7 million Btu per hour (MMBtu/hr).

The following conditions shall be applicable:

- (a) Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:
 - (1) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (b) Pursuant to 326 IAC 4-2-2, the pet crematories identified as PC-1, PC-2, and PC-3 shall:
 - (1) Consist of primary and secondary chambers or the equivalent;



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- (2) Be equipped with a primary burner unless burning only wood products;
 - (3) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules);
 - (4) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan approved by the Administrator;
 - (5) Emission units PC-1, PC-2, and PC-3 each shall not emit particulate matter in excess of five-tenths (0.5) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air because the maximum solid waste capacity is less than two hundred (200) pounds per hour;
 - (6) If any of the above requirements (1) through (5) are not met, then the owner or operator shall stop charging the incinerators until adjustments are made that address the underlying cause of the deviation; and
 - (7) The incinerators are exempt from requirement (5) if subject to a more stringent particulate matter emission limit in 40 CFR 52 Subpart P, State Implementation Plan for Indiana.
- (c) Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (d) Pursuant to Chapter 511 "Air Pollution Control Ordinance", Section 511-503, the source shall comply with the following conditions:
- (1) An operator must be in attendance at all times while the crematory is in operation.
 - (2) The operator must keep a log (in a form approved by the Administrator) of the number of bodies cremated in each crematory, chamber temperature at the beginning of each cremation for each emission unit, and the dates and times of the cremation for each emission unit.
 - (3) Required records must be kept on-site for three (3) years and available for inspection by the City of Indianapolis Office of Environmental Services (OES).
 - (4) An afterburner must be used at all times while each unit is in operation. The afterburner must be operating at a minimum temperature of 1600° F while each crematory is in operation.
 - (5) Opacity shall not exceed ten percent (10%) for any six-minute period as measured according to 40 CFR 60, Appendix A, Method 9.
 - (6) Aside from the animal remains, no additional material other than cardboard or pine may be added to the crematory for incineration.
 - (7) No cremation may occur between sunset and sunrise unless the unit has a Certified Opacity Monitor (COM) operating at all times during night burning.

This condition (d) is a "local only" condition. It is not enforceable under state or federal law by IDEM or U.S.EPA. Pursuant to Chapter 511 "Air Pollution Control Ordinance", Sections 511-503 and 511-504 of the Revised Code of the Consolidated City of Indianapolis and Marion County, Indiana, this condition is enforceable by the City of Indianapolis through its Department of Public Works, Office of Environmental Services.

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Indiana Department of Environmental Management, Office of Air Quality (IDEM, OAQ) and City of Indianapolis, Office of Environmental Services (OES) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

ORIGINAL SIGNED BY

Timothy J. Method
Environmental Coordinator
Department of Public Works

mmd

cc: Mr. Ed Dembinski
File
Air Compliance – Matt Mosier
IDEM, OAQ – Mindy Hahn
Marion County Health Department

**Indiana Department of Environmental Management
Office of Air Quality
and
Indianapolis Office of Environmental Services**

Technical Support Document (TSD) for an Exemption

Source Description and Location

Source Name: Pet Angel World Services LLC
Source Location: 4202 South Meridian Street, Units A & B, Indianapolis, IN 46217
County: Marion
SIC Code: 7261
Exemption No.: E097-26428-00639
Permit Reviewer: Monica Doyle

On April 17, 2008, the Indiana Department of Environmental Management (IDEM) Office of Air Quality (OAQ) and the Office of Environmental Services (OES) received an application from Pet Angel World Services LLC related to the construction and operation of a pet crematory.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Marion County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11 th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O ₃	Attainment effective November 8, 2007, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Attainment effective July 10, 2000, for the part of Franklin Township bounded by Thompson Road on the south; Emerson Avenue on the west; Five Points Road on the east; and Troy Avenue on the north. Attainment effective July 10, 2000, for the part of Wayne Township bounded by Rockville Road on the north; Girls School Road on the east; Washington Street on the south; and Bridgeport Road on the west. The remainder of the county is not designated.
¹ Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour designation was revoked effective June 15, 2005. Basic Nonattainment effective April 5, 2005 for PM _{2.5} .	

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (3) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Marion County has been classified as nonattainment for PM2.5 in 70 FR 943 dated January 5, 2005. Until U.S. EPA adopts specific New Source Review rules for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5.

(c) Other Criteria Pollutants

Marion County has been classified as attainment or unclassifiable in Indiana for SO₂, CO, NO₂, and Pb. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The IDEM, OAQ and OES have reviewed an application, submitted by Pet Angel World Services LLC on April 17, 2008, relating to the construction and operation of a pet crematory.

The source consists of the following new emission unit(s):

- (a) Two (2) Therm Tec S-27-T animal crematories, with multiple chambers, identified as PC-1 and PC-2, approved for construction in May, 2008, each with a maximum operating capacity of 75 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, each with a maximum heat input capacity of 0.8 million Btu per hour (MMBtu/hr).
- (b) One (1) Fire Lake Shenandoah C-12-400 animal crematory, with multiple chambers, identified as PC-3, approved for construction in May, 2008, with a maximum operating capacity of 60 pounds per hour (lbs/hr), using natural gas as a supplemental fuel, with a maximum heat input capacity of 0.7 million Btu per hour (MMBtu/hr).

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A, pages 1 through 3, of this TSD for detailed emission calculations.

Permit Level Determination – Exemption

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/Emission Unit	Potential To Emit of the Entire Source (tons/year)							
	PM	PM10*	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
PC-1, PC-2, and PC-3	3.22	3.28	1.11	2.41	1.46	5.45	<25	< 10
Total PTE of Entire Source	3.22	3.28	1.11	2.41	1.46	5.45	<25	< 10

negl. = negligible
 * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of all regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this exemption. Each cremation unit has a charge rate of less than fifty (50) tons per day. Therefore, it is not subject to the requirements of 40 CFR Part 60 Subpart E.
- (b) New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60, Subpart Ec (60.50c through 60.58c)), Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced after January 20, 1996, does not apply because the crematory incinerators are considered pathological waste combustors and are not considered municipal waste combustors or hospital/medical/infectious waste incinerators.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) included in this exemption. The crematories do not combust hazardous waste as defined in 40 CFR 261. Therefore, they are not subject to the requirements of 40 CFR 63 Subpart EEE.
- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

- (a) 326 IAC 2-1.1-3 (Exemptions)
Exemption applicability is discussed under the Permit Level Determination – Exemption section above.
- (b) 326 IAC 2-1.1-5 (Non-attainment New Source Review)
This source is not major under non-attainment NSR because it has the potential to emit less than 100 tons of PM-10 (as a surrogate for PM-2.5). Therefore, the Non-attainment New Source Review requirements are not applicable.
- (c) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This source is not a major source. This source is not one (1) of the twenty-eight (28) listed source categories. The potential to emit each criteria pollutant from the entire source is less than 250 tons per year. Therefore, this source is a minor source and the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements) are not applicable.
- (d) 326 IAC 2-3 (Emission Offset)
This source is not major because the emissions are less than the Emission Offset major source levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.
- (e) 326 IAC 2-4.1 (Hazardous Air Pollutants)
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (f) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1(a)(1), (2), and (3), this source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit under 326 IAC 2-7, it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year, and it is not located in Lake or Porter Counties.
- (g) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:
 - (1) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (h) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (i) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source does not have the potential to emit twenty-five (25) tons per year of fugitive particulate matter, and is exempt from air pollution permit requirements . Therefore, 326 IAC 6-5 does not apply.

Cremation Units

- (a) 326 IAC 4-2-2 (Incinerators: requirements)
Pursuant to 326 IAC 4-2-2, the animal crematories identified as PC-1, PC-2, and PC-3 shall:
- (1) Consist of primary and secondary chambers or the equivalent;
 - (2) Be equipped with a primary burner unless burning only wood products;
 - (3) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules);
 - (4) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan approved by the Administrator;
 - (5) Emission units PC-1, PC-2, and PC-3 shall not emit particulate matter in excess of five-tenths (0.5) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air because the maximum solid waste capacity is less than two hundred (200) pounds per hour;
 - (6) If any of the above requirements (1) through (5) are not met, then the owner or operator shall stop charging the incinerators until adjustments are made that address the underlying cause of the deviation; and
 - (7) The incinerators are exempt from requirement (5) if subject to a more stringent particulate matter emission limit in 40 CFR 52 Subpart P, State Implementation Plan for Indiana.
- (b) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County); 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating); and 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The Permittee does not have the potential to emit more than one hundred (100) tons per year of particulate matter. Since potential PM emissions are less than ten (10) tons per year, then actual emissions are less than ten (10) tons per year. Therefore, 326 IAC 6.5 does not apply. The cremation units are not considered sources of indirect heating. Therefore, 326 IAC 6-2 does not apply. Pursuant to 326 IAC 6-3-1(b)(2), incineration is exempt. Therefore, 326 IAC 6-3 does not apply.
- (c) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The Permittee has no individual facility with the potential to emit more than twenty-five (25) tons per year of VOCs. Therefore, 326 IAC 8-1-6 does not apply.
- (d) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
This stationary source, constructed after the applicability date of March 21, 1972, is not subject to the requirements of 326 IAC 9-1-2(a)(3), since the animal crematories (PC-1 and PC-2) burn pathological waste and do not burn refuse consisting of more than 50 percent municipal type waste (household, commercial/retail, and/or institutional waste).
- (e) 326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators)
The cremation units are not subject to the requirements of 326 IAC 11-6, since they are considered pathological waste combustors and not hospital/medical/infectious waste combustors.
- (f) 326 IAC 11-8 (Commercial and Industrial Solid Waste Incineration Units)
The cremation units are not considered Commercial and Industrial Solid Waste Incineration Units. Therefore, 326 IAC 11-8 does not apply.

Local Rule Applicability

Pursuant to Chapter 511 "Air Pollution Control Ordinance", Section 511-503, the source shall comply with the following conditions:

- (a) An operator must be in attendance at all times while the crematory is in operation.
- (b) The operator must keep a log (in a form approved by the Administrator) of the number of bodies cremated in each crematory, chamber temperature at the beginning of each cremation for each emission unit, and the dates and times of the cremation for each emission unit.
- (c) Required records must be kept on-site for three (3) years and available for inspection by the City of Indianapolis Office of Environmental Services (OES).
- (d) An afterburner must be used at all times while each unit is in operation. The afterburner must be operating at a minimum temperature of 1600° F while each crematory is in operation.
- (e) Opacity shall not exceed ten percent (10%) for any six-minute period as measured according to 40 CFR 60, Appendix A, Method 9.
- (f) Aside from the animal remains, no additional material other than cardboard or pine may be added to the crematory for incineration.
- (g) No cremation may occur between sunset and sunrise unless the unit has a Certified Opacity Monitor (COM) operating at all times during night burning.

These conditions (a through g) are "local only" conditions. They are not enforceable under state or federal law by IDEM or U.S.EPA. Pursuant to Chapter 511 "Air Pollution Control Ordinance", Sections 511-503 and 511-504 of the Revised Code of the Consolidated City of Indianapolis and Marion County, Indiana, these conditions are enforceable by the City of Indianapolis through its Department of Public Works, Office of Environmental Services.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on April 17, 2008, and additional information received on April 23, 2008.

The operation of this source shall be subject to the conditions of the attached proposed Exemption No. 097-26428-00639. The staff recommends to the Administrator that this Exemption be approved.

OES Contact

- (a) Questions regarding this proposed exemption can be directed to Monica Doyle at Indianapolis Office of Environmental Services, Permits Section, 2700 South Belmont, Indianapolis, Indiana 46221 or by telephone at (317) 327-2846.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov.

Pet Angel World Services LLC
Indianapolis, Indiana
Permit Reviewer: Monica Doyle

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TSD for Exemption E097-26428-00639

**Appendix A: Emission Calculations
Incinerator**

Company Name: Pet Angel World Services LLC
Address City IN Zip: 4202 S. Meridian Street, Indianapolis, IN 46217
Exemption: E097-26428-00639
Reviewer: Monica Doyle
Date: April 18, 2008

For crematories PC-1, PC-2, and PC-3

Throughput lbs/hr 210	Throughput ton/yr 919.8
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Emission Factor in lb/ton	POLLUTANT				
	PM	SO2	CO	VOC	NOX
Potential Emissions in ton/yr	7.0	2.5	10.0	3.0	3.0
	3.2	1.1	4.6	1.4	1.4

Methodology

There is no emission factor for PM-10 listed in AP-42, therefore it is assumed that PM-10 = PM.

Emission factors are from AP 42 Table 2.1-12 Uncontrolled emission factors for industrial/commercial refuse combustors, other than municipal waste, multiple chambers

Throughput (lb/hr) * 8760 hr/yr * ton/2000 lb = throughput (ton/yr)

Emission Factor (lb/ton) * throughput(ton/yr)* 1 ton / 2000 lbs = Potential Emissions (tons/ yr)

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Pet Angel World Services LLC
Address City IN Zip: 4202 S. Meridian Street, Indianapolis, IN 46217
Exemption: E097-26428-00639
Reviewer: Monica Doyle
Date: April 18, 2008

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

2.3

20.1

For crematories PC-1, PC-2, and PC-3

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.02	0.08	0.01	1.01	0.06	0.85

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Pet Angel World Services LLC
Address City IN Zip: 4202 S. Meridian Street, Indianapolis, IN 46217
Exemption: E097-26428-00639
Reviewer: Monica Doyle
Date: April 18, 2008

	HAPs - Organics				
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	2.415E-06	1.380E-06	8.625E-05	2.070E-03	3.910E-06

	HAPs - Metals				
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	5.750E-07	1.265E-06	1.610E-06	4.370E-07	2.415E-06

Methodology is the same as page 2.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.